A Previously Unknown Benefit of Dual Class Shares: Better Price Informativeness*

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Abstract

We study the implications of equity's combined cash flow and voting rights for price informativeness and corporate policies. Using hand-collected data on dual-class shares, we show that separating cash flow and voting rights improves the informativeness of share prices about future cash flows and mitigates arbitrage frictions. The effects are stronger for dual-class shares with no voting rights and when voting rights are more important, as measured by the occurrence of close votes. Consistent with the role of voting rights in short-selling constraints, dual-class shares respond less to negative earnings surprises, have larger average short positions, and do not exhibit a shorting premium anomaly. Overall, we put forth a new proposition, unexplored in the literature, that highlights price informativeness as a potential benefit of separating equity cash flow and voting rights.

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1 Introduction

The allocation of cash flow and voting rights across stakeholders is at the forefront of modern corporate finance, with broad implications for corporate governance, capital structure policies, and the design of equity securities. The predominant approach to understanding equity's combined cash flow and voting rights, which dates back to Berle and Means (1932) and is modeled by Harris and Raviv (1988), posits that bundling these rights together helps alleviate agency problems and constitutes a socially optimal corporate governance structure. A large empirical literature documents the benefits of combining cash flow and voting rights (e.g., Adams and Ferreira, 2008), and suggests that dual-class shares, which provide disparate voting rights to different groups of shareholders, may hurt corporate governance and firm value (e.g., Gompers, Ishii, and Metrick, 2010). Institutional investors share this common perception, and typically object to dual-class share structures (e.g., McNabb, 2014; Appel, Gormley, and Keim, 2017). Moreover, this perception is part of the active debate at exchanges, index providers, the SEC and in Congress on whether companies with dual-class shares should be included in products or even allowed for public trading.

In this paper, and contrary to the existing literature, we put forth a novel mechanism that highlights a potential benefit of separating equity cash flow and voting rights. We compile a comprehensive database of dual-class shares and show that separating between cash flow and voting rights increases the informativeness of stock prices about future cash flows, potentially allowing managers and investors to learn more from prices and make decisions based on share prices (e.g., Bond et al., 2012). As such, our findings suggest that optimal security design should consider the tradeoff between agency costs and information production that results from the amalgamation or separation of cash flow and voting rights.

To develop the conceptual framework, we build on a voluminous literature pioneered by Lease et al. (1983, 1984), which shows that, in addition to standard cash flow and discount rate drivers, equity prices also contain a control (or voting) premium.[1] And while the unconditional average premium can be small (e.g., Christoffersen et al., 2007; Aggarwal et al., 2015), realized premia are often large and volatile. For example, Zingales (1995) documents that voting premia in U.S. markets are as large as 40% and change suddenly.[2] High voting premia and their volatility can result not only from variation in the importance of the voting issues, but also from the identity of the marginal voter, as well as blockholders' strategic trades to manipulate who the marginal voter is (Levit et al., 2019; Levit et al., 2021). Since the value of voting is non-constant and marginal voters vary over time—even suddenly as new information emerges—equity voting rights can complicate the inference of information about future cash flows from equity prices.

In addition to its direct effect on stock price informativeness, volatility in voting premia can also weaken the incentives to produce information about future cash flows because it increases the riskiness of trading profits. Moreover, voting rights may interfere with the ability to short shares and impound negative information into share prices, further reducing share price informativeness.[3] Specifically, the difficulty in creating synthetic votes (e.g., Kalay et al., 2014) implies that when the lenders of shorted shares wish to exercise their voting rights, the shorted shares must be recalled. This creates additional risk for arbitrageurs who short-sell shares. Since the demand for voting shares can be unpredictable, in part because the identity of the marginal voter may change unexpectedly (as evidenced by the volatile voting premium), share owners may

[1] See, for example, Levy (1983), Rydqvist (1988), Horner (1988), and Zingales (1994).
[2] See Broussard and Vaihekoski (2019) for a more recent measure of voting premium volatility.
[3] A large literature has shown the importance of short selling for price discovery and full incorporation of negative information into prices (e.g., Desai et al., 2002; Cohen et al., 2007; Boehmer et al., 2008; Diether et al., 2009; Saffi and Sigurdsson, 2011; Engelberg et al., 2018; Blocher and Ringgenberg, 2018).

be reluctant to lend their shares. The resulting reduction in the supply of shares for shorting, even outside of voting windows, increases short-selling costs for shares with voting rights.[4]

To study the effect of voting rights on the price informativeness of equity, we exploit heterogeneity in the importance of voting rights due to the presence of dual-class shares. Dual-class share structures typically imply common shares with little or no effective voting rights that will always (or nearly always) be outvoted by the other share classes. As such, the voting premium in such shares will be persistently close to zero. We construct the sample by hand-collecting data from Bloomberg on companies with more than one share class, including information regarding the voting rights of each share class. We combine this data with other datasets used previously in the literature to form a large dataset of dual-class shares over time. To be included in the sample, the firm's shares must be publicly traded in the U.S. The sample includes 842 unique dual-class firms from 1965 to 2020. We combine the hand-collected data with information from CRSP, Compustat and IBES on share prices, returns, accounting variables, and earnings forecasts for both dual-class firms and single-class firms. Using these data, we calculate the measure of share price informativeness in Bai, Philippon and Savov (2016), which estimates how well market prices predict future firm earnings for horizons of 1-5 years.

In our baseline panel regression specification, we find that dual-class shares have higher price informativeness. In particular, over horizons of one to five years, the relation between a firm's market value and its future earnings is 2-10 times stronger, and these effects are highly statistically significant at the 1 percent level. These findings suggest that price informativeness increases when cash flow and voting rights are separated.

[4] Relatedly, Christoffersen et al. (2007) and Aggarwal et al. (2015) extract estimates of the voting premium by exploiting variation in lending fees and loaned shares.

Since dual-class structures are nonrandom, a possible concern is that (unobservable) differences between dual-class and non-dual-class firms are driving the variation in share price informativeness across these two groups. For example, dual-class firms tend to be larger, and, consequently, their share prices might be more informative due to higher visibility, better disclosure, or greater analyst following. To address these concerns, we provide estimates from several tighter specifications. First, we enhance the baseline specification with measures of firm size based on both market capitalization and total book assets and interact these measures with price informativeness. Second, we saturate the regression models with an increasingly restrictive set of fixed effects, including industry-by-year, which estimate the effects of dual-class shares on price informativeness for firms in the same industry and year. Third, we provide estimates from matched-sample analyses that match each dual-class firm to non-dual-class firms based on a number of firm characteristics, including size, total assets, debt-to-equity ratio, book-to-market and earnings. We find consistent results across all these specifications that dual-class shares have higher price informativeness.

We next explore the channels through which the effects operate, focusing first on voting rights. The separation between cash flow and voting rights has a particularly sizeable effect on price informativeness when voting rights are important. To see this, we exploit the variation in voting rights within the subsample of dual-class firms. We find that dual-class firms with zero voting rights for common stock have higher price informativeness relative to those dual-class firms with higher voting rights for common stock. We also study the effect of shareholder voting outcomes. We sort firms based on voting outcomes and find that the increase in price informativeness is considerably larger for dual-class shares where recent voting outcomes were close. This finding is consistent with the hypothesis that voting rights complicate the inference of

future cash flows from share prices when voting rights are important enough to have a material effect on voting outcomes and, consequently, on share prices.

We then explore a second channel through which the effects operate by focusing on short-selling frictions. In doing so, we first study price responses to earnings surprises. In these analyses, we focus on negative earnings surprises because frictions in the short-selling market can lead to failures to fully incorporate bad news into stocks with voting rights. Consistent with our hypotheses, we find a more muted market response to negative earnings surprises for dual-class shares than for non-dual-class shares.[5] This finding is consistent with higher price informativeness for dual-class shares, having impounded negative information prior to the earnings announcement.

Second, we provide evidence that dual-class shares have, on average, higher shorting interests compared to non-dual-class shares. This finding is consistent with less shorting-market frictions for non-voting-shares, allowing arbitragers to short-sell these stocks and thereby impound negative information.

Third, we study the shorting anomaly. Rapach et al. (2016) show that an investment strategy that is long stocks with low short interest and short stocks with high short interests earns a significant alpha. This result is attributable to ongoing underperformance by the highly shorted stocks, implying that the short arbitrage is limited in the sense that negative information is not yet fully impounded into prices. To assess whether lower voting rights allow for more accurate incorporation of negative information, we perform a double sort on both short interests and dual-class structures. We find that the shorting anomaly is only present in non-dual-class shares, i.e., those with voting rights. This evidence suggests that shorting frictions play a key role in the effect

[5] Gurun & Karakaş (2022) show that the value of voting rights changes around earnings announcements. In particular, voting rights become more valuable when firms perform poorly, partially offsetting price responses to negative earnings surprises. Combined, their findings and ours point to a tradeoff between price informativeness and voting rights premia in price reactions to negative earnings surprises.

of voting rights on price informativeness since higher shorting interests are more effective at incorporating negative information for stocks with low voting rights.

Overall, our paper is related to a large literature that studies the causes and consequences of the allocation of cash flow and voting rights. The dominant view in this literature is that concentrated control, or deviations from the "one share-one vote" principle, leads to agency problems and entrenchment (e.g., Bebchuk et al., 2000; Johnson et al., 2000a, 2000b; Morck et al., 2005; Khanna and Yafeh, 2006; Yermack, 2006). We add to this literature by highlighting a potential benefit of unbundling cash flow and voting rights: higher informativeness of share prices about future cash flows. Importantly, while our paper puts forth a new tradeoff between agency problems and price informativeness, it does not attempt to estimate its net effect.

Another voluminous literature attempts to estimate the value of control from differences between the market values of different share classes or from option and equity loan markets (e.g., Lease et al., 1983, 1984; DeAngelo and DeAngelo, 1985; Zingales, 1995; Cox and Roden, 2002; Christoffersen et al., 2007; Kind and Poltera, 2013; Kalay et al., 2014; Aggarwal et al., 2015). We augment this literature by showing that the control premium has implications for share price informativeness and consequently corporate policies.

2 Data and Sample Construction

Our focus is on the differential price informativeness between dual-class stocks and single-class stocks. We identify dual-class shares and obtain their respective voting rights in several ways using multiple sources. We begin by using Bloomberg to identify dual-class shares. Bloomberg provides the ticker and exchange, the CUSIP, the shares outstanding, the most recent date the shares were traded, and the total voting rights per share class on that date. The use of Bloomberg is particularly

valuable because it identifies dual-class stocks, where one class is not traded. We combine this data with the dual-class shares data published by the Council of Institutional Investors.[6] This list includes the company name, ticker, voting rights per share and IPO year of the dual-class shares.[7]

We supplement our dual-class share data by inferring dual-class shares from the CRSP database, where multiple stocks (i.e., permnos) are traded on the same date for the same firm (i.e., permco). We overlay this data with the sample used in Gompers, Ishii and Metrick (2010)[8], which provides a comprehensive dataset on dual-class firms and their respective voting rights from 1995 to 2002. We compute the percentage voting rights of a given share class by multiplying the voting rights per share by the shares outstanding of that share class on a given date[9], and dividing by the sum of the weighted shares across share classes. For all dual-class shares, we assume that the voting rights remain the same for the period during which the dual-class structure exists. We retain in our study the share class with the minority voting rights that amounts to less than 50% of the total voting rights. This results in 842 unique dual-class firms with minority voting rights and non-missing accounting data.

For each of our traded dual-class stocks, we obtain price, returns, shares outstanding and SIC codes from CRSP. We append to our sample of dual-class firms all other single-class stocks (20,174 unique firms) found in CRSP. We require both dual-class and single-class stocks to have a share code of 10 or 11, and be traded on the NYSE, Amex or Nasdaq for the years 1965 to 2019. We take all accounting variables from Compustat. To be included in the sample, we require non-missing SIC codes, total assets and earnings. For the majority of our empirical analysis, we use

[6] See https://www.cii.org/dualclass_stock for the list.
[7] Aggarwal, Eldar, Hochberg and Litov (2022) also construct a database of dual-class shares. Our approaches are relatively similar.
[8] We thank the authors for providing this data.
[9] For traded shares, the shares outstanding is obtained from CRSP. For non-traded share classes, the shares outstanding is obtained from Bloomberg. If a time series of shares outstanding is not available (e.g., for non-traded shares), we use the most recent shares outstanding available from Bloomberg.

the full sample of years available. However, for some tests, we also use either analyst forecast estimates from IBES, which data is available starting in 1986, or short interest data from Compustat, which is available from 1973 onwards. Thus, in a small subset of tests, our observations are reduced as a result of the limitations of these two databases.

To measure price informativeness, we follow Bai, Philippon and Savov (2016). First, we construct annual valuation ratios as the natural log of each stock's market capitalization divided by the stock's total assets. The market capitalization is measured based on the closing price of the last trading day of March in year *t*. A stock's total assets are obtained from the most recent fiscal year end as of December *t-1* in the previous calendar year. The minimum 3-month gap allows sufficient time for market prices to reflect the accounting information. We assess price informativeness by studying the degree to which the market valuation ratio predicts future earnings for year $t+k$, where horizon $k = 1$ to 5 years. Earnings are taken from the Compustat variable earnings before interest and taxes (EBIT) and scaled by the contemporaneous measure of total assets (AT). All dollar values are in millions and are adjusted for inflation with the 2012 CPI as the baseline index of 100. All ratios are winsorized at the 1% level.

Table 1 presents summary statistics of the total sample, as well as the subsamples of the single-class and dual-class firms. Panel A shows that for the full sample of firms, the mean market capitalization of firms in our sample is $2.2 billion, the average total assets is $4.5 billion, and average earnings before interest and taxes is $243 million. Overall, dual-class firms tend to be bigger, with a larger market capitalization of $3.7 billion, larger total assets of $7.78 billion, and higher mean earnings. Our primary measure of price informativeness, the natural log of the market-to-assets ratio, has a mean of -0.42 for the full sample of firms, with a lower -0.72 for dual-class shares. At the same time, the forecasted earnings-to-assets measures are smaller for the full sample

than the subsample of dual-class stocks across all horizons. Both have comparable standard deviations.

Panel B shows the average number of firms per year and the percentage of dual-class firms by SIC 1-digit industry. Panel A of Figure 1 presents these numbers in graphical format. As can be seen in Table 1 Panel B, dual-class shares make up, on average, between 1.4% and 7.0% of the firms across industries, with the manufacturing industry (SIC1 = 3) consisting of the highest proportion of dual-class firms. Given the non-uniform distribution across industries, we control for industry at the 3-digit SIC code level throughout our analysis.

3 Price Informativeness

3.1 Empirical Specification

Using the new data on dual-class shares, we build on the methodology of BPS 2016. We measure price informativeness by seeing how market prices of equity are able to predict future earnings of firms at the 1 to 5-year horizon. Specifically, using a panel regression framework, we regress annual earnings at each horizon scaled by current firm assets on the log of current market value scaled by current assets, an indicator variable for whether a share is dual-class (low voting rights) and an interaction of these two per the following equation for horizons h=1 to 5:

$$\frac{E_{i,t+h}}{AT_{i,t}} = a_h \, log\left(\frac{M_{i,t}}{AT_{i,t}}\right) + b_h \left(\frac{E_{i,t}}{AT_{i,t}}\right) + c_h \text{dualclass}_{i,t} + d_h \text{dualclass}_{i,t} * log\left(\frac{M_{i,t}}{AT_{i,t}}\right) + e_j + f_t + \epsilon_{i,t}$$

for firm i at year t, where dualclass is the indicator for a share being the lower voting rights share class for a dual-class firm, M is the firm's market value, AT is total assets and E is earnings. To control for obvious public information, we include current year earnings scaled by total assets. We also include fixed effects for SIC-3 industry j as well as year t fixed effects. To control for

correlation within industry and calendar years, we double cluster at the SIC-3 industry and year level.[10]

The coefficient, d_h, on this interaction is our main interest. If the addition of voting rights makes prices less informative, this coefficient will be positive because the dual-class shares will have prices less distorted by voting rights.

3.2 Baseline Results

Table 2 shows the results of the panel regressions with three columns for each forecasting horizon of 1 to 5 years. The first column of each horizon shows the regression without the dual-class indicator or interaction. The second column shows the regression with the dual-class indicator but not the interaction. The third column is our main specification as it shows the interaction effect that dual-class shares have on price informativeness. Panel A presents results from a regression controlling for industry fixed effects and year fixed effects. For robustness, Panel B presents results from the same regression but controlling for industry-by-year fixed effects.

Focusing on Panel A, columns 1 through 3 show that the market price has a small, but statistically significant predictive ability at the 1-year and 5-year horizons. However, for the 2, 3 and 4-year horizons, the predictive ability is small and insignificant in all but one specification. This small price informativeness across all shares is in part driven by the inclusion of current earnings which absorbs the information in prices already contained in persistent earnings. Though we find smaller price informativeness than Bai, Philippon and Savov (2016), our findings are

[10] The choice of cluster grouping is guided by our choice of fixed effects. Our results throughout are robust to clustering at the SIC-1, SIC-2 and firm-level.

qualitatively similar as they also find small measures of price informativeness in the full sample of firms.[11]

In contrast, we see the price informativeness of dual-class shares is markedly positive across all horizons. The interaction term of market price with the dual-class indicator (columns 3, 6, 9, 12, and 15) is large and statistically significant at the 1% level at the 2-, 3-, and 4-year horizon and statistically significant at the 5% level for the 1- and 5-year horizon. The positive value confirms the hypothesis that the combination of cash flow and voting rights in shares interferes with price informativeness of share prices. Interestingly, the magnitude of the coefficient increases with horizon, suggesting that dual-class shares with low voting rights have even greater price informativeness for longer horizons.

Table 2 Panel B presents the results of our main specification while also controlling for firm size and total assets in the presence of industry-by-year fixed effects rather than industry fixed effects and year fixed effects. Columns 3, 6, 9, 12 and 15 each show larger coefficients than those in Panel A, our main specification that includes independently. In addition, the results remain highly statistically significant across horizons shows the results are quantitatively and qualitatively similar despite having the more granular fixed effects. In all subsequent tests, we only use industry fixed effects and year fixed effects. This choice is guided by the fact that the inclusion of industry-by-year fixed effects results in a sizeable loss of observations due to singletons. Although the loss relative to the baseline sample size is small, in some tests, the loss amounts to nearly 30% of all dual-class firms.

[11] Their headline result on which they focus is how price informative changes over time for firms in the S&P500. There are too few dual-class firms in the S&P500 for us to make meaningful comparisons in the subsample on which (Bai, et al., 2016) focus.

The summary statistics presented in Table 1 suggest a large difference in the size of non-dual-class and dual-class firms. Larger firms, given their higher liquidity and increased investor attention may have inherently more price informativeness. To ensure that our dual-class indicator is not merely capturing the increased price informativeness that may arise in larger firms, we run our main specification while controlling for a firm's market capitalization and total assets, as well as the interaction of these two variables with price informativeness. Table 3 presents the results of this robustness specification. We omit the coefficients on the size controls and their interaction with the price informativeness measure for brevity. We find across all horizons that the price informativeness of dual-class shares remains economically large, highly statistically significant, and relatively similar to that in our baseline specification. Thus, our finding of higher price informativeness among dual-class shares is different from the price informativeness attributable to the larger market capitalizations associated with dual-class shares.

3.3 Matched sample analysis

To further address concerns regarding the confounding effect of firm size and dual-class share classification, we construct a matched sample of firms using a greedy matching algorithm within each calendar year that matches dual-class firms to non-dual-class firms based on multiple firm characteristics. Specifically, for each calendar year, we run a logistic regression for all firms in that year, where we regress the dual-class indicator for each firm on the firm's contemporaneous market capitalization, total assets, earnings before interest and taxes, debt-to-equity ratio and book-to-market.[12]

[12] Although desirable, we are unable to match within year and industry, as numerous dual-class firms may not have sufficient matches, or the matches will vary substantially in size, nullifying the purpose of matching. That said, we continue to include SIC-3 industry fixed effects to capture any industry-wide covariates. Although untabulated, our results are robust to SIC-1 and SIC-2 fixed effects as well.

We then use the model to predict a likelihood score that a given firm has a dual-class share structure and rank all firms by this score. Then, for each dual-class firm, we select the five non-dual-class firms with the nearest scores as matches for the dual-class firm. Our matched sample includes all dual-class firms along with the five nearest matches of non-dual-class firms. Given some dual-class firms may match on the same non-dual-class firms, we remove any duplicate firms in the sample. This results in a sample of 48,808 observations, with 9,429 observations associated with dual-class shares (842 unique firms) and the remaining 39,379 observations associated with non-dual-class shares.

Table 3 presents summary statistics analogous to those presented in Table 1 on the full sample. As can be seen in Panel A, the mean market capitalization of non-dual-class shares and dual-class shares are considerably more similar than in our full sample, with a difference of only 365 million as opposed to the 1.574 billion difference in the full sample. In addition, both total assets and earnings have also become more similar in the matched sample relative to the full sample. In addition, Panel B of Figure 1 shows that the proportion (tabulated in Table 4 Panel B) of dual-class firms within each SIC-1 industry has become more similar.

Using the matched sample, we re-run our main specification along with the controls for firm size for robustness. Table 4 presents the results of these regressions, which are similar to those of the main specification at all horizons. More specifically, the coefficients on the interaction variable of the dual-class indicator and the price informativeness measure are larger in magnitude relative to those in our main specification. They also all remain highly statistically significant at the 1% level for the 2-, 3- and 4-year horizons and at the 5% level for the 1- and 5-year horizons. Overall, the matched sample results suggest that the increased price informativeness associated

with dual-class shares and attributed to lower voting rights is unlikely due to differences in the characteristics of dual-class and non-dual-class firms.

4 Economic Mechanisms

We argue that voting rights decrease price informativeness through at least two channels. The first channel is that a change in the voting premium is associated with volatility in prices not due to cash flows, thereby creating noise within the price and lowering its informativeness about cash flows. In addition, stocks with higher voting rights have greater recall risk for short sellers, thereby limiting their willingness to short and limiting the price informativeness. We now provide evidence of each of these channels.

4.1 Variation in Voting Rights

We have shown that dual-class shares, because they have lower voting rights, are associated with greater price informativeness relative to non-dual-class shares. We now explore the variation of voting rights within the set of dual-class firms. In particular, we separate the dual-class stocks into two subsamples: 1) those that have zero voting rights for common stock, and 2) those that have at least some voting rights for common stock. We expect that the common stock of dual-class shares with zero voting rights should have greater price informativeness than those of dual-class shares with some voting rights.

To test this, we focus only on the subsample of dual-class shares. We define an indicator variable "Has no voting rights" equal to 1 if the stock has zero voting rights, and 0 otherwise. To test our prediction, we run three regressions: 1) using the subsample of firms with voting rights ("Has no voting rights" = 0), we regress earnings on our price informativeness measure and

controls for, 2) using the subsample of firms with no voting rights ("Has no voting rights" = 1), we run the same regression, and 3) using the full sample of dual-class shares, we run the same regression as in (1) and (2) but augment it with an interaction of the "Has no voting rights" indicator variable and the price informativeness measure.

Table 5 presents the results of these regressions for the 1- to 5-year horizons. The coefficients on the first row of first two columns at each horizon reveal the difference in price informativeness for dual-class firms that have zero voting rights (the second column) relative to the price informativeness for dual-class firms that have some voting rights. Across all horizons, the coefficient in the second column is substantially larger in magnitude than the coefficient in the first column, suggesting that dual-class shares with zero voting rights are more price informative than dual-class shares with some voting rights. Columns 3, 6, 9, 12, and 15 test whether the difference in price informativeness is statistically significant. Consistent with the differences between the coefficients on the price informativeness variables in the second and first columns, the coefficient on the interaction of the indicator "Has no voting rights = 1" and the price informativeness measure is positive, suggesting firms with zero voting rights are more price informativeness. The higher price informativeness is statistically significant at the 5% level for the 1-, 2- and 3-year horizons and at the 10% level for the 4-year horizon. Overall, the results combined reveal that despite their drawbacks, dual-class shares, by disentangling the voting and cash flow rights, provide a benefit of increased price informativeness.

4.2 Close Votes

As further evidence of the benefit separating cash flow and voting rights using a dual-class share structure, we exploit variation in election outcomes among firms, and in particular, close votes. A close vote generally indicates some current and likely ongoing contention within the firm, leading

to a voting premium that has potentially more volatility as the need to exercise corporate control through voting increases at times compared to firms without such contention.[13] We hypothesize this increased volatility thereby decreases a stock's price informativeness about cash flows. As dual-class firms have lower voting rights, the increase in price volatility from vote premia due to a close vote should be less on a dual-class share than on a single-class share. This leads to the prediction that the incremental price informativeness of dual-class firms we documented in our main specification should be larger for dual-class firms in which there is a recent close vote relative to non-dual class firms in which there was not.

To test this channel, we collect election outcome data for all firms in our sample for which such data is available. We then construct an indicator if, in the previous year, the firm had at least one close vote. This assumes that the effect of the close vote on share price volatility and/or willingness to short persists for up to 1 year. We follow the existing literature (e.g., Christoffersen, Geczy, Musto and Reed, 2007) and define the indicator variable "Has close vote" equal to 1 if the votes cast for a ballot proposal are within 5% of the required among for passage (i.e., for a simple majority, a close vote would be between 45% and 55% of the outcome). To test our prediction, we run our main specification three times as follows: 1) on the subsample of firms that did not have a close vote, 2) on the subsample of firms that did have a close vote, and 3) on the full sample of firms with votes and including a triple interaction between the price informativeness measure, our dual-class indicator and the "Has close vote" indicator. The coefficient of interest is on this triple interaction, where a positive coefficient can be interpreted as saying that a dual-class firm with a close vote is more price informative relative to a non-dual class firm with a close vote.

[13] We cannot directly measure the volatility of the voting premium, because doing so requires either both classes of shares be traded publically. Even if options are available on common stock, the voting premium in the equity cannot be extracted because the literature shows the voting premium derived from options is different from that derived from the equity directly.

Table 6 presents the results of these three specifications for horizons k=1 to k=5 years. Comparing the first two columns of each horizon, we see that the coefficient on the interaction of the dual-class indicator with the price informativeness measure is substantially larger when there is a close vote for the 1-, 2-and 4-year horizon. The third column tests for a significant difference between these two price informativeness effects by including a triple interaction of the price informativeness measure interacted with the dual-class indicator and the indicator "Has close vote" indicator. Columns 3, 6 and 12 show a positive and significant coefficient, which implies that price informativeness for dual-class shares relative to non-dual-class shares is higher when a recent election outcome had a close vote. This is consistent with our argument that the disentanglement of the voting premium arising from a dual-class share structure leads to improved price informativeness.

4.3 Earnings Surprises

Another way to see the increased price informativeness of shares with lower voting rights is to study what happens around earnings surprises. We use the standard measure of earnings surprises (SUE) which is the difference in actual earnings announcements from the IBES reported analyst forecasts. For each quarter we then investigate the price response of equity to these surprises by regressing the cumulative average returns on SUE. We focus on the near-term window of t-1 to t+1 for an earnings announcement at t=0 when computing the CARs. Similar to our main regressions, we use panel regression with SIC-3 industry and time (quarter-year) fixed effects along with double clustering on those dimensions while controlling for firm market cap. We study the subsamples of positive and negative earnings surprises separately. We again consider three specifications. The first specification shows the relationship between the CAR and the SUE. A positive coefficient suggests the CAR moves in the same direction as the SUE. The second

specification also includes an indicator variable for whether that firm has a dual-class share structure. The third specification adds the interaction effect of the dual-class indicator variable and the SUE. Our primary focus is on this coefficient.

Recall that there are two channels through which the combination of voting rights with cash flow rights can interfere with price informativeness. The first is the direct channel of prices containing information about two objects with the value of votes acting as noise in the ability of prices to predict cash flows. The second channel is through reduced arbitrage opportunities; namely, more limited ability to short shares due to voting rights increasing the recall risk or reducing the willingness of owners to lend shares. This limitation in shorting which we explore more directly in the next section, limits the impounding of negative information. These two channels yield effects in the same direction for shares with less voting rights when there is negative information to be impounded before a negative earnings surprise. However, in the case of positive surprises, the differential between the effect of the second channel across the two types of shares is weaker or even absent for dual-class firms than in the negative surprise case since there is no negative information to impound. This creates weaker predictions for positive surprises (offsetting effects) than for negative surprises (compounding effects). Therefore, we consider negative and positive surprises separately.

Columns 1 to 3 of Table 7 show the regressions of the price responses to negative earnings surprises. In the immediate window around the earnings announcement, CAR[-1,1], we see that the SUE variable has a positive coefficient statistically significant at the 5% level, implying that the CAR moves in the same (negative) direction as the negative SUE. More precisely, a dollar per share of negative earnings surprise non-dual-class shares is associated with a negative 2.4% cumulative abnormal return.

Our main interest lies in the incremental effect that a negative SUE for with a dual-class share (with low voting rights) has on the CAR. Column 3 shows a negative coefficient (also statistically significant at the 5% level) on the interaction of the dual-class indicator with the SUE variable. Because this sample is constrained to negative earnings surprises, the negative coefficient implies that the CAR of a dual-class share is less negative in response to a negative SUE. In other words, price changes following a negative SUE are *muted* for dual-class shares (i.e., low voting rights shares) compared to all shares. More precisely, a dual-class share is associated with a 2.8% less negative response than the average response of 2.4% for all shares. Combining the main effect and the interaction effect, dual-class shares have a 0.5% positive return in response to a negative SUE. This muted price reaction is consistent with the dual-class shares already having impounded some of the negative information released in the earnings announcement that was a surprise relative to analysts' forecasts.

In the case of negative earnings surprises, the two channels through which shares with lower voting rights better incorporate information are both present. Thus, in the case of positive earnings surprises, there is less (or no) negative news to impound, and the shorting channel does not come into play. Columns 4 to 6 of Table 4 show the regressions of price responses to positive earnings surprises.

As only one channel is at play, the results are weaker (nothing is statistically significant) compared to the negative earnings surprise regressions. The main effect in column 4 shows that the CAR moves in the same direction as the positive earnings surprise moves (i.e., a positive CAR), although the effect is statistically insignificant. The coefficient on the interaction variable of the SUE and dual-class indicator is again negative (although statistically insignificant), suggesting once again that the CAR reaction is more muted to a surprise earnings announcement.

4.4 Limits to Arbitrage: Short-Selling

In the previous section, we saw some evidence of the relaxed limits to arbitrage attributable to increased shorting allowing for better impounding of negative news among dual-class shares. We now provide more direct evidence that shorting appears less costly for dual-class shares, which we attribute to the lower voting rights of such shares.

In Table 8, we use a panel regression framework with industry and time fixed effects and clustering along those dimensions to show that dual-class shares are more actively shorted. We continue to control for firm market capitalization. Using data on short interest that are available in Compustat for the beginning and middle of each month we regress the short interest of stocks on an indicator variable for dual-class shares. We find that short interests are 1.1% of outstanding shares larger for dual-class shares than for all shares.

One might worry that this larger short interest is simply due to more liquidity or shares available for trade in dual-class shares. To control for this, we also regress short interests scaled by typical trading volume, i.e., days-to-cover, on the indicator variable for dual-class shares. We find that the days-to-cover is 2.741 days higher than for dual-class shares. This shows the short interests are not merely higher because dual-class shares are more liquid.

Together these results show that shorting is easier in dual-class shares. The ease of shorting is consistent with the fact that dual-class shares have lower voting rights compared to typical shares with standard voting rights. This supports the shorting channel as an additional mechanism in which combining cash flow rights and voting rights interferes with price informativeness.

To further show the effect of the shorting channel on price informativeness, we focus directly on equity returns subsequent to different levels of shorting activity across stocks. The literature has established that short interests are insufficient to fully incorporate the negative

information arbitrageurs have about stocks. Profits can even be made from real-time trading strategies exploiting information on short interests. One such trading strategy is reflected in the short interests anomaly per Rapach, et al. (2016). At the beginning of each month, stocks are sorted into quintiles based on the short interest of the stock. The long end of this anomaly is invested in stocks with recent low short interest and the short end is invested in stocks with recently high short interests. The anomaly produces alphas because the stocks with high short interest continue to underperform despite arbitrageurs already having significant short positions in them. This suggests that arbitrageurs are not able to take sufficiently large short positions to fully impound the negative information that they have. One explanation for the limits is that there is risk in additional shorting due, in part, to risk associated with stock recall or volatility unrelated to the arbitrageurs' information—both of these can be caused by the inclusion of voting rights in share prices.

We predict that if the limits of these arbitrageurs are at least partly due to voting rights creating shorting constraints, then the shorting anomaly should be lessened or even eliminated in dual-class shares where these voting rights are smaller. We test this hypothesis by performing a double sort on short interest and dual- versus non-dual share class.

Table 9 shows the results of a double sort that sorts stocks based on their short-interest ratio and dual-class share structure into portfolios. Panel A shows the excess equal-weighted returns of the portfolios formed by the two sorts. Panel B shows the alphas relative to the Fama and French (1993) 3-factor model augmented with the Carhart (1998) momentum factor. The alphas are our main interest. We see that the shorting anomaly in the non-dual-class shares has an alpha of 0.21, although is marginally statistically insignificant with a t-statistic of 1.55. In contrast, we see the anomaly in the dual-class shares has a negative alpha of -0.40. Not only is the alpha statistically insignificant but it also is the wrong sign. Thus, we see the shorting anomaly is concentrated in

non-dual-class shares. Indeed, the difference-in-differences across the double sort—focusing on the short anomaly in only non-dual class shares—leads to an economically large and statistically significant alpha of 7.2% per year (0.61% per month). This is consistent with the hypothesis that the inclusion of voting rights along with cash flow rights in stock shares limits the ability of arbitrageurs to incorporate negative information into stock prices by limiting the arbitrageurs' ability to short stocks.

5 Conclusion

The existing literature has predominantly focused on the corporate governance costs associated with dual-class share structures that assign one share class disproportionate voting rights. We put forth higher price informativeness as a novel benefit of dual class share structures, which has not been explored by the existing literature. Intuitively, dual class shares that separate between cash flow and voting rights increase the informativeness of share prices about future cash flows. We provide extensive evidence about the mechanisms through which these effects operate, including the importance of voting rights and frictions in the sort-selling market.

Overall, our findings suggest that dual-class share structures have the benefit of increasing share price informativeness, which may partially counteract corporate governance concerns by allowing managers and investors to learn more about the prospects of the firm and its projects. Moreover, our findings can explain why new firms, which likely can benefit the most by learning from financial markets, may choose a dual-class share structure.

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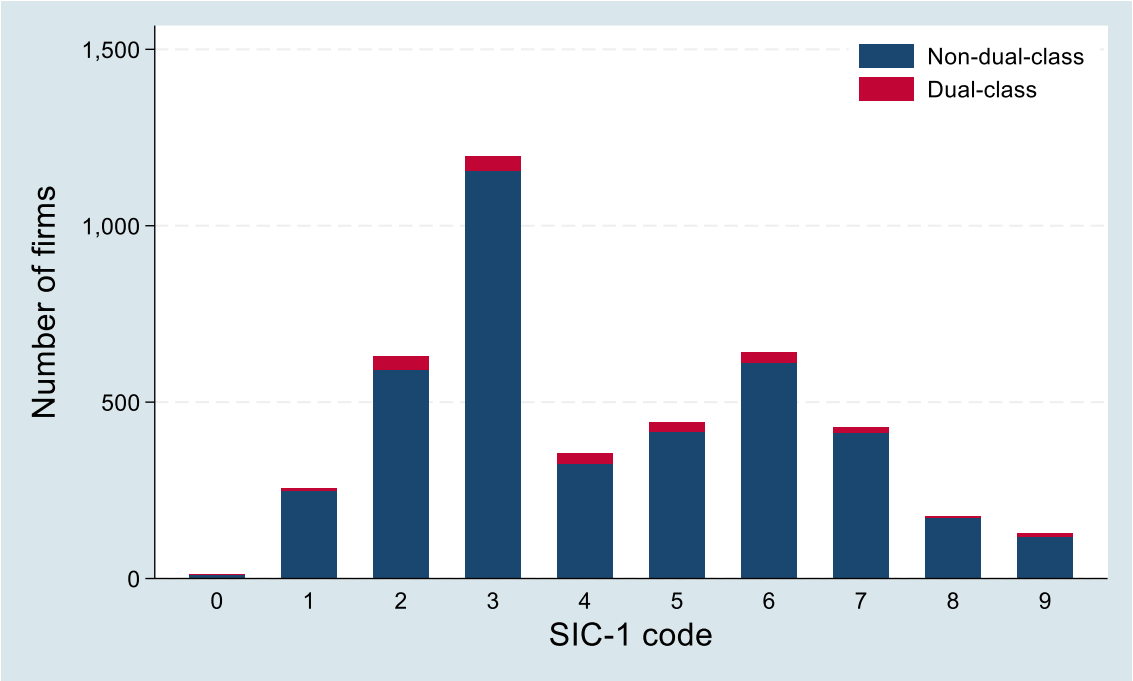
Figure 1
The Number of Firms with Dual-Class Shares by Industry

This figure shows the average number of non-dual-class and dual-class shares in the full sample (Panel A) and matched sample (Panel B) by industry, where industry classification is based on one-digit SIC industry codes. The sample consists of CRSP common stocks with non-missing data from 1965 to 2019. For dual-class shares where both share classes are traded, we exclude the shares with the majority voting rights among the two classes.

Panel A: Full Sample



Panel B: Matched Sample

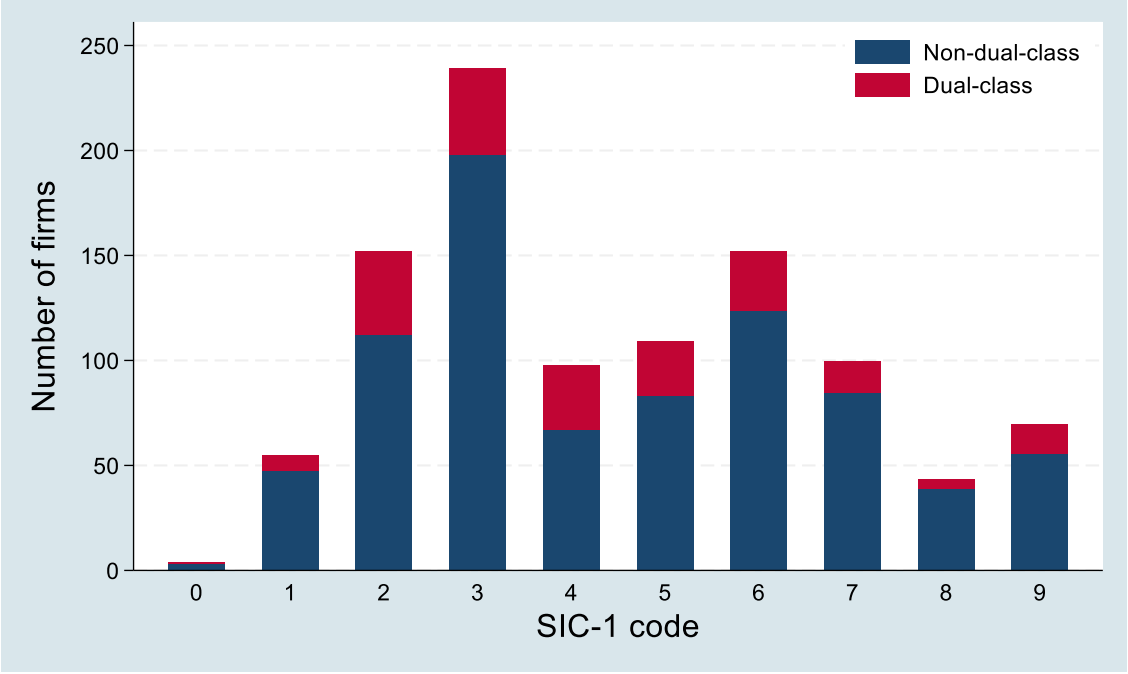


Table 1
Full Sample Summary Statistics

Panel A shows summary statistics for the full sample of firms, and the subsamples of non-dual-class and dual-class shares. The sample consists of CRSP common stocks with non-missing variables from 1965 to 2020, excluding dual-class shares with the majority voting rights among the two classes. Market cap is measured as of the last trading day in March for year t. Total assets "A" is measured as of the most recent fiscal year ending in December of t-1. "M/A" is the market cap divided by total assets. E/A is the earnings divided by total assets. All dollar values are in millions and are adjusted for inflation with the 2012 CPI as the baseline index of 100. All ratios are winsorized at the 1% level. Panel B shows the total number of firms by SIC-1 industry and the % of firms on average that are dual-class in any given year of the sample.

Panel A: Summary Statistics

	Full Sample			Non-dual class shares			Dual class shares		
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median
Market cap	2272	14006	166	2215	13826	160	3762	18012	368
Total assets	4508	41145	256	4383	40922	242	7781	46481	778
Earnings (EBIT)	243	1624	13	234	1597	12	452	2186	51
ln (M/A)	-0.42	1.21	-0.37	-0.41	1.21	-0.36	-0.72	1.18	-0.63
E/A	0.02	0.22	0.06	0.02	0.22	0.06	0.07	0.12	0.07
E_{t+1}/A_t	0.03	0.21	0.07	0.03	0.21	0.07	0.08	0.13	0.08
E_{t+2}/A_t	0.05	0.23	0.07	0.05	0.23	0.07	0.09	0.15	0.08
E_{t+3}/A_t	0.06	0.25	0.07	0.06	0.25	0.07	0.11	0.16	0.09
E_{t+4}/A_t	0.07	0.27	0.08	0.07	0.27	0.08	0.12	0.18	0.09
E_{t+5}/A_t	0.09	0.29	0.08	0.09	0.30	0.08	0.13	0.19	0.10
Turnover	1.11	1.52	0.55	1.09	1.51	0.54	1.38	1.72	0.80

Panel B: Percentage of Dual-Cass Firms by Industry

	Average	
SIC-1 industry	Mean # firms	% dual-class
0	12.2	6.7%
1	249.4	3.0%
2	591.7	6.2%
3	1155.6	3.4%
4	324.2	8.8%
5	416.8	5.8%
6	612.9	3.8%
7	413.9	3.4%
8	171.8	1.8%
9	118.2	9.5%

Table 2
Share Price Informativeness about Future Earnings

This table shows the results from panel regressions of the ratio of future earnings to total assets on the interaction of a price informativeness measure and a dual-class indicator variable. The future earnings are measured at different yearly horizons from k = 1 to 5. "Total assets" (AT) is measured at year 0. The coefficient on the variable "$Ln(M_t/A_t)$" is the measure of price informativeness used in Bai, Philippon, and Savov (2016 JFE). The variable "Dual-class" is an indicator equal to 1 if a stock is a dual-class share and that share class is the share with the minority voting rights. Dual-class shares with the majority voting rights are excluded from the sample. The variable "Dual-class = 1 x $Ln(M_t/A_t)$" is the interaction of the price informativeness variable and the dual-class indicator. The control variable "E_t/A_t"" is the ratio of earnings to total assets, both measure in year 0. We also include (but do not tabulate for brevity) controls for market capitalization and total assets, as well as their interaction with the price informativeness measure. Panel A further controls for industry fixed effects and year fixed effects, while panel B controls for SIC-3 industry-by-year fixed effects. The sample consists of CRSP common stocks with non-missing variables from 1965 to 2019. All variables are adjusted for inflation using BEA GDP deflator (2012=100) and winsorized at the 1% level. Standard errors double clustered for SIC-3 industry and year are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

Panel A: Industry and Year Fixed Effects

	Dependent variable: $Earnings_{t+k}/AT_t$, where k is in years														
	k=1			k=2			k=3			k=4			k=5		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Ln(M_t/A_t)$	0.006**	0.006**	0.006**	0.001	0.002	0.001	0.002	0.003	0.002	0.006	0.006	0.005	0.011**	0.011**	0.010*
	(0.002)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)
E_t/A_t	0.819***	0.818***	0.818***	0.787***	0.787***	0.786***	0.783***	0.782***	0.781***	0.785***	0.783***	0.782***	0.787***	0.785***	0.784***
	(0.022)	(0.022)	(0.022)	(0.034)	(0.034)	(0.034)	(0.042)	(0.043)	(0.042)	(0.050)	(0.050)	(0.049)	(0.059)	(0.059)	(0.059)
Dual class = 1		0.014***	0.017***		0.015***	0.021***		0.016***	0.025***		0.019***	0.028***		0.022***	0.032***
		(0.002)	(0.002)		(0.002)	(0.003)		(0.003)	(0.003)		(0.004)	(0.005)		(0.005)	(0.007)
Dual class = 1 x $Ln(M_t/A_t)$			0.004*			0.009***			0.012***			0.014***			0.014**
			(0.002)			(0.003)			(0.003)			(0.004)			(0.006)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (SIC3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.71	0.71	0.71	0.54	0.54	0.54	0.44	0.44	0.44	0.36	0.36	0.36	0.30	0.30	0.30
N	203787	203787	203787	188245	188245	188245	171560	171560	171560	156390	156390	156390	142822	142822	142822

Table 2 (continued).

Panel B: Industry-by-Year Fixed Effects

	Dependent variable: $Earnings_{t+k}/AT_t$ where k is in years														
	k=1			k=2			k=3			k=4			k=5		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Ln(M_t/A_t)$	0.006**	0.006**	0.006**	0.002	0.002	0.001	0.003	0.003	0.003	0.007	0.007*	0.006	0.013**	0.013***	0.012**
	(0.003)	(0.003)	(0.003)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)
E_t/A_t	0.819***	0.818***	0.818***	0.791***	0.791***	0.790***	0.789***	0.789***	0.787***	0.793***	0.792***	0.791***	0.798***	0.796***	0.795***
	(0.021)	(0.021)	(0.021)	(0.033)	(0.033)	(0.033)	(0.041)	(0.041)	(0.041)	(0.049)	(0.049)	(0.048)	(0.059)	(0.059)	(0.058)
Dual class = 1		0.013***	0.016***		0.014***	0.020***		0.015***	0.023***		0.018***	0.028***		0.023***	0.032***
		(0.002)	(0.002)		(0.002)	(0.003)		(0.003)	(0.003)		(0.004)	(0.005)		(0.005)	(0.007)
Dual class = 1 x $Ln(M_t/A_t)$			0.004**			0.009***			0.012***			0.014***			0.014**
			(0.002)			(0.003)			(0.003)			(0.004)			(0.006)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (SIC3) x Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.73	0.73	0.73	0.58	0.58	0.58	0.49	0.49	0.49	0.41	0.41	0.41	0.36	0.36	0.36
N	200126	200126	200126	184531	184531	184531	167800	167800	167800	152666	152666	152666	139137	139137	139137

Table 3
Matched Sample Summary Statistics

Panel A shows summary statistics for the matched sample of firms, along with the subsamples of non-dual-class and dual-class shares within that sample. We construct the matched sample of firms by running annual logistics regressions of the dual-class indicator on firm-level characteristics for the full sample of firms. The firm-level characteristics include market cap, EBIT, total assets, book-to-market and the debt-to-equity ratio of the firms. From the regression, we compute the probability score of being a dual-class share for both dual-class and non-dual-class shares. For each dual-class share, we extract the non-dual-class shares with the 5 closest scores in each year and remove any duplicates values to form our matched sample. Market cap is measured as of the last trading day in March for year t. Total assets "A" is measured as of the most recent fiscal year ending in December of t-1. "M/A" is the market cap divided by total assets. E/A is the earnings divided by total assets. All dollar values are in millions and are adjusted for inflation with the 2012 CPI as the baseline index of 100. All ratios are winsorized at the 1% level. Panel B shows the total number of firms by SIC-1 industry and the % of firms on average that are dual-class in any given year of the sample.

Panel A: Summary Statistics

	Full Sample			Non-dual class shares			Dual-class shares		
	Mean	SD	Median	Mean	SD	Median	Mean	SD	Median
Market cap ($ millions)	3494	18647	233	3423	18683	206	3788	18491	355
Total assets ($ millions)	7131	58965	391	6920	61350	314	8014	47729	790
Earnings ($EBIT_t$)	379	2258	19	358	2207	13	467	2457	51
ln (M_t/A_t)	-0.46	1.19	-0.38	-0.39	1.18	-0.31	-0.78	1.19	-0.70
E_t/A_t	0.02	0.21	0.06	0.01	0.22	0.05	0.07	0.12	0.07
E_{t+1}/A_t	0.03	0.20	0.06	0.02	0.21	0.05	0.08	0.13	0.08
E_{t+2}/A_t	0.04	0.22	0.06	0.03	0.23	0.06	0.09	0.15	0.08
E_{t+3}/A_t	0.06	0.23	0.07	0.04	0.25	0.06	0.10	0.16	0.08
E_{t+4}/A_t	0.07	0.25	0.07	0.06	0.27	0.06	0.12	0.17	0.09
E_{t+5}/A_t	0.09	0.27	0.07	0.07	0.29	0.07	0.13	0.19	0.09
Turnover	1.34	1.68	0.76	1.36	1.69	0.77	1.29	1.67	0.70

Panel B: Percentage of Dual-Cass Firms by Industry

	Average	
SIC-1 industry	Mean # firms	% dual-class
0	3.0	26.6%
1	46.4	12.0%
2	98.9	25.3%
3	196.2	15.1%
4	54.4	30.2%
5	75.1	19.8%
6	117.7	15.4%
7	81.2	16.7%
8	37.8	7.2%
9	60.7	21.8%

Table 4
Share Price Informativeness about Future Earnings: A Matched Sample Analysis

This table shows the results from panel regressions of the ratio of future earnings to total assets on the interaction of a price informativeness measure and a dual-class indicator variable using a matched sample of firms. Details on the construction of the matched sample can be found in Section 3.2. The future earnings are measured at different yearly horizons from k = 1 to 5. "Total assets" (AT) is measured at year 0. The coefficient on the variable "$Ln(M_t/A_t)$" is the measure of price informativeness used in Bai, Philippon, and Savov (2016 JFE). The variable "Dual-class" is an indicator equal to 1 if a stock is a dual-class share and that share class is the share with the minority voting rights. Dual-class shares with the majority voting rights are excluded from the sample. The variable "Dual-class = 1 x $Ln(M_t/A_t)$" is the interaction of the price informativeness variable and the dual-class indicator. The control variable "E_t/A_t"" is the ratio of earnings to total assets, both measure in year 0. We also include (but do not tabulate for brevity) size controls of market capitalization and total assets, as well as their interaction with the price informativeness measure. The sample consists of CRSP common stocks with non-missing variables from 1965 to 2019. All variables are adjusted for inflation using BEA GDP deflator (2012=100) and winsorized at the 1% level. Standard errors double clustered for SIC-3 industry and year are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

	Dependent variable: $Earnings_{t+k}/AT_t$, where k is in years														
	k=1			k=2			k=3			k=4			k=5		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Ln(M_t/A_t)$	0.006**	0.007**	0.006*	0.001	0.002	-0.001	0.002	0.003	-0.001	0.005	0.006	0.001	0.011**	0.013**	0.008
	(0.003)	(0.003)	(0.003)	(0.004)	(0.005)	(0.005)	(0.004)	(0.005)	(0.005)	(0.005)	(0.005)	(0.006)	(0.005)	(0.005)	(0.006)
E_t/A_t	0.809***	0.807***	0.806***	0.793***	0.791***	0.789***	0.785***	0.782***	0.779***	0.768***	0.765***	0.760***	0.771***	0.766***	0.761***
	(0.026)	(0.027)	(0.026)	(0.042)	(0.042)	(0.042)	(0.050)	(0.050)	(0.049)	(0.061)	(0.062)	(0.060)	(0.064)	(0.065)	(0.063)
Dual class = 1		0.013***	0.017***		0.014***	0.021***		0.015***	0.024***		0.018***	0.028***		0.023***	0.032***
		(0.002)	(0.002)		(0.002)	(0.002)		(0.003)	(0.003)		(0.004)	(0.005)		(0.005)	(0.007)
Dual class = 1 x $Ln(M_t/A_t)$			0.005**			0.011***			0.014***			0.017***			0.016**
			(0.002)			(0.003)			(0.003)			(0.005)			(0.006)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (SIC3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.72	0.72	0.72	0.58	0.58	0.58	0.47	0.47	0.47	0.38	0.38	0.38	0.32	0.32	0.32
N	45178	45178	45178	41969	41969	41969	37792	37792	37792	34070	34070	34070	30741	30741	30741

Table 5
No Voting Rights

This table shows the results from panel regressions explaining the ratio of future earnings to total assets. We estimate the regressions in subsamples sorted on whether the dual-class shares have or do not have voting rights (columns 1-2, 4-5, 7-8, 10-11, and 13-14), and in pooled regressions that interact the variable *Has no voting rights* with price informativeness (columns 3, 6, 9, 12, and 15). Future earnings are measured at different yearly horizons from k = 1 to 5. *Total assets* (*AT*) is measured at year 0. The coefficient on the variable $Ln(M_t/A_t)$ is the measure of price informativeness used in Bai, Philippon, and Savov (2016 JFE). The control variable E_t/A_t is the ratio of earnings to total assets, both measured in year 0. We also include (but do not tabulate for brevity) controls for market capitalization and total assets, as well as their interaction with the price informativeness measure. The sample consists of CRSP common stocks with non-missing variables from 1965 to 2019. All variables are adjusted for inflation using BEA GDP deflator (2012=100) and winsorized at the 1% level. Standard errors double clustered for SIC-3 industry and year are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

	Dependent variable: $Earnings_{t+k}/AT_t$ where k is in years														
	k=1			k=2			k=3			k=4			k=5		
	Has no voting rights			Has no voting rights			Has no voting rights			Has no voting rights			Has no voting rights		
	0	1		0	1		0	1		0	1		0	1	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Ln(M_t/A_t)$	0.006**	0.025***	0.007**	0.005	0.034***	0.006	0.008	0.040***	0.010*	0.013**	0.041***	0.015**	0.020***	0.063***	0.022***
	(0.003)	(0.006)	(0.003)	(0.004)	(0.010)	(0.004)	(0.005)	(0.012)	(0.005)	(0.006)	(0.013)	(0.006)	(0.006)	(0.021)	(0.006)
E_t/A_t	0.811***	0.703***	0.808***	0.760***	0.578***	0.754***	0.674***	0.499***	0.670***	0.614***	0.459***	0.611***	0.482***	0.065	0.476***
	(0.041)	(0.057)	(0.039)	(0.056)	(0.059)	(0.053)	(0.083)	(0.080)	(0.077)	(0.088)	(0.092)	(0.080)	(0.079)	(0.206)	(0.076)
Has no voting rights = 1			0.003			0.006			0.001			-0.004			-0.010
			(0.004)			(0.006)			(0.008)			(0.011)			(0.014)
Has no voting rights = 1 x $Ln(M_t/A_t)$			0.007**			0.012**			0.014**			0.015*			0.016
			(0.003)			(0.005)			(0.006)			(0.008)			(0.010)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (SIC3)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.66	0.82	0.67	0.49	0.71	0.51	0.39	0.66	0.41	0.34	0.62	0.36	0.32	0.59	0.33
N	7961	1056	9024	7670	1024	8702	7131	963	8103	6643	905	7558	6190	852	7050

Table 6
Close Votes

This table shows the results from panel regressions explaining the ratio of future earnings to total assets. We estimate the regressions in subsamples sorted on whether the firm has had close vote outcomes over the past year (columns 1-2, 4-5, 7-8, 10-11, and 13-14), and in pooled regressions that interact the variable *Has close vote* with price informativeness (columns 3, 6, 9, 12, and 15). Future earnings are measured at different yearly horizons from k = 1 to 5. *Total assets* (*AT*) is measured at year 0. The coefficient on the variable $Ln(M_t/A_t)$ is the measure of price informativeness used in Bai, Philippon, and Savov (2016 JFE). The control variable E_t/A_t is the ratio of earnings to total assets, both measured in year 0. We also include (but do not tabulate for brevity) controls for market capitalization and total assets, as well as their interaction with the price informativeness measure. The sample consists of CRSP common stocks with non-missing variables from 1965 to 2019. All variables are adjusted for inflation using BEA GDP deflator (2012=100) and winsorized at the 1% level. Standard errors double clustered for SIC-3 industry and year are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

	Dependent variable: $Earnings_{t+k}/AT_t$, where k is in years														
	k=1			k=2			k=3			k=4			k=5		
	Close vote			Close vote			Close vote			Close vote			Close vote		
	0	1		0	1		0	1		0	1		0	1	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
$Ln(M_t/A_t)$	0.007	0.004	0.007	0.002	-0.003	0.002	0.001	0.002	0.001	0.004	0.001	0.004	0.009	0.002	0.009
	(0.005)	(0.005)	(0.005)	(0.006)	(0.006)	(0.006)	(0.007)	(0.007)	(0.007)	(0.008)	(0.007)	(0.008)	(0.008)	(0.010)	(0.008)
E_t/A_t	0.877***	0.851***	0.871***	0.894***	0.850***	0.885***	0.918***	0.824***	0.898***	0.927***	0.852***	0.911***	0.940***	0.806***	0.910***
	(0.017)	(0.022)	(0.017)	(0.030)	(0.031)	(0.029)	(0.037)	(0.046)	(0.036)	(0.055)	(0.083)	(0.057)	(0.067)	(0.098)	(0.068)
Dual class = 1	0.000	0.015**	0.008***	0.000	0.024**	0.010***	0.001	0.015	0.016***	0.001	0.039**	0.016*	0.001	0.030	0.030**
	(0.000)	(0.006)	(0.003)	(0.000)	(0.011)	(0.003)	(0.000)	(0.013)	(0.005)	(0.001)	(0.015)	(0.008)	(0.001)	(0.025)	(0.012)
Dual class = 1 x $Ln(M_t/A_t)$	0.003	0.010*	0.003	0.008**	0.017**	0.008**	0.013***	0.012	0.013**	0.014**	0.032**	0.014*	0.026***	0.025	0.026**
	(0.003)	(0.005)	(0.003)	(0.003)	(0.008)	(0.003)	(0.004)	(0.011)	(0.005)	(0.006)	(0.013)	(0.007)	(0.009)	(0.021)	(0.009)
Has close vote = 1			0.000			-0.000			0.003			0.003			-0.002
			(0.003)			(0.005)			(0.003)			(0.005)			(0.005)
$Ln(M_t/A_t)$ x Has close vote = 1			-0.002			-0.004			0.000			-0.003			-0.006
			(0.002)			(0.004)			(0.002)			(0.003)			(0.004)
Dual class = 1 x Has close vote = 1			0.005			0.013*			-0.003			0.024**			0.002
			(0.004)			(0.007)			(0.010)			(0.009)			(0.023)
$Ln(M_t/A_t)$ x Has close vote = 1 x Dual class = 1			0.006*			0.009*			-0.003			0.017*			-0.002
			(0.003)			(0.005)			(0.009)			(0.009)			(0.019)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry (SIC3) FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Year FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.81	0.77	0.80	0.69	0.64	0.68	0.60	0.50	0.57	0.52	0.43	0.49	0.44	0.39	0.42
N	27224	8357	35618	25757	7924	33720	22555	6995	29596	19529	6207	25773	17815	4613	22478

Table 7

Difference in response to earnings surprises among single-class and dual-class shares

This table presents results from a regression of a stocks cumulative abnormal returns (CAR; 1% = 0.01) on the main and interaction effects of a firm's quarterly standardized unexpected earnings and whether that stock is a dual-class share. The CAR is calculated from t-1 to t+1 around the earnings announcement at t=0. "SUE" is the standardized unexpected earnings (in dollars) based on IBES reported analyst earnings forecasts and actual earnings announced. "Dual-class = 1" is an indicator variable equal to 1 if a stock is a dual-class share and that share class is the share with the minority voting rights. Dual-class shares with the majority voting rights are excluded from the sample. Columns 1-3 show the results for the set of observations with negative surprise earnings. Columns 4-6 show the results for the set of observations with positive surprise earnings. The sample consists of CRSP common stocks with non-missing IBES data from 1986 to 2019. We include market capitalization at the end of each calendar quarter to control for size. To help with interpretation, for both the negative and positive earnings surprises a positive coefficient implies the CAR moves in the same direction as the SUE. For the coefficient on the dual-class interaction, a positive negative coefficient for the subsample of negative earnings surprises implies the CAR moves less negative (i.e., muted) for a negative miss if the firm is a dual-class firm, while a negative coefficient for positive SUE implies the CAR is incrementally less positive (i.e., muted) for beating estimates. Standard errors double clustered for quarter-year calendar dates and SIC-3 industry are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

	Subsample of firms with:					
	Negative Earnings Surpise			Positive Earnings Surprise		
	(1)	(2)	(3)	(4)	(5)	(6)
SUE	0.020**	0.020**	0.024**	0.010	0.010	0.010
	(0.010)	(0.010)	(0.012)	(0.008)	(0.008)	(0.008)
Dual class = 1		0.002	0.001		0.003	0.003
		(0.001)	(0.002)		(0.002)	(0.002)
Dual class = 1 x SUE			-0.028**			-0.017
			(0.012)			(0.087)
Size controls	Yes	Yes	Yes	Yes	Yes	Yes
Industry FE (SIC3)	Yes	Yes	Yes	Yes	Yes	Yes
Quarter-year FE	Yes	Yes	Yes	Yes	Yes	Yes
R-squared	0.033	0.033	0.033	0.009	0.009	0.009
N	102405	102405	102405	173985	173985	173985

Table 8
Short Interest

This table shows the results from a panel regression of a stock's measure of short interest on an indicator variable equal to 1 if a stock is a dual-class share and that share class is the share with the minority voting rights. Dual-class shares with the majority voting rights are excluded from the sample. The first column uses the short interest ratio as the dependent variable, while the second column uses the days-to-cover ratio as the dependent variable. We include time (month-year) and industry (SIC-3) fixed effects. The sample consists of non-financial CRSP common stocks with non-missing short interest data from 1973 to 2019. The short interest data is measured at the beginning and middle of the month as reported by Compustat. Standard errors double clustered for time and SIC-3 industry are shown in parentheses. ***, **, * reflect significance at the 1%, 5%, and 10% levels.

	Ratio	
	Short interest	Days to cover
	(1)	(2)
Dual class = 1	0.011***	2.741***
	(0.003)	(0.822)
Size controls	Yes	Yes
Industry FE (SIC3)	Yes	Yes
Month-year FE	Yes	Yes
R-squared	0.104	0.052
N	2019250	2019000

Table 9
The Short Interest Anomaly

This table presents the excess returns and alphas for portfolios of stocks sorted on their short-interest ratio and an indicator of whether the firm has a dual-class share structure. Stocks are sorted monthly based on their prior month's short-interest ratio. Panel A shows the equal-weighted excess returns of the portfolio while Panel B shows the alphas of the portfolios. The alphas are obtained from regressing the time series of the portfolio of excess returns on the Fama and French (1993) 3-factor model augmented by the Carhartt (1998) momentum factor. T-statistics are shown in parentheses.

Panel A: Raw Excess Returns

Short-interest	Dual-Class stock		
ratio	No	Yes	Difference
Low (long)	0.80	0.73	-0.07
	(3.21)	(2.39)	(-0.35)
2	0.79	1.15	0.36
	(3.22)	(3.98)	(2.14)
3	0.83	1.05	0.21
	(3.35)	(3.72)	(1.53)
4	0.84	1.18	0.33
	(3.25)	(4.07)	(2.39)
High (short)	0.91	1.35	0.44
	(3.13)	(4.72)	(3.36)
L/S	-0.11	-0.62	0.51
	(-0.72)	(-2.48)	(2.25)

Panel B: Alphas Based on the Fama-French 3-Factor Model Plus Momentum

Short-interest	Dual-Class stock		
ratio	No	Yes	Difference
Low (long)	0.23	0.09	-0.14
	(1.80)	(0.39)	(-0.70)
2	0.08	0.35	0.27
	(0.95)	(1.91)	(1.56)
3	0.05	0.23	0.17
	(0.68)	(1.52)	(1.22)
4	0.03	0.40	0.37
	(0.42)	(2.68)	(2.57)
High (short)	0.02	0.49	0.47
	(0.23)	(3.42)	(3.59)
L/S	0.21	-0.4	0.61
	(1.55)	(-1.60)	(2.60)